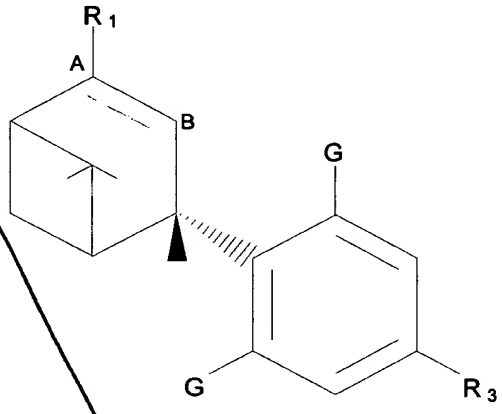
THE CLAIMS

What is claimed is:

1. A pharmaceutical composition for treating or preventing hypertension, inflammation, peripheral pain, gastrointestinal disorders, or autoimmune diseases, comprising as an active ingredient a compound of the general formula:



having the (3S,4S) configuration, and which is essentially free of the (3R,4R) enantiomer, wherein:

the dashed line A---B designates an optional double bond,

R_1 is (a) -R'N(R")$_2$ wherein R' is C_1-C_5 straight or branched chain alkyl and each R", which may be the same or different, is hydrogen or C_1-C_5 straight or branched chain alkyl optionally containing a terminal -OR'" or -OC(O)R'" moiety wherein R'" is hydrogen or C_1-C_5 straight or branched chain alkyl, (b) -Q wherein Q is a heterocyclic moiety having a labile hydrogen atom so that said moiety acts as a carboxylic acid analogue, (c) -R'X wherein R' is C_1-C_5 straight or branched chain alkyl and X is halogen, (d) -R'C(O)N(R")$_2$ wherein R' is a direct bond or C_1-C_5 straight or branched chain alkyl and each R", which may be the same or different, is hydrogen or C_1-C_5 straight or branched chain alkyl optionally containing a terminal -OR'" or -OC(O)R'" moiety wherein R'" is hydrogen or C_1-C_5 straight or branched chain alkyl, (e) -R'C(O)OR" wherein R' is a direct bond or C_1-C_5 straight or branched chain alkyl and R" is hydrogen or C_1-C_5 straight or branched chain alkyl optionally containing a terminal -OR'" or

-OC(O)R''' moiety wherein R''' is hydrogen or C_1-C_5 straight or branched chain alkyl, (f) -R' wherein R' is C_1-C_5 straight or branched chain alkyl, or (g) -R'OR''' wherein R' is C_1-C_5 straight or branched chain alkyl and R''' is hydrogen or C_1-C_5 alkyl;

G is hydrogen; and

R_3 is (a) C_1-C_{12} straight or branched chain alkyl, (b) -OR'''', in which R'''' is a straight chain or branched C_2-C_9 alkyl which may be substituted at the terminal carbon atom by a phenyl group, or (c) $-(CH_2)_nOR'''$ wherein n is an integer of 1 to 7 and R''' is hydrogen or C_1-C_5 alkyl.

2. The compound of claim 1, wherein R_3 is a straight or branched chain C_5-C_{12} alkyl.

3. The compound of claim 1, wherein R_3 is 1,1-dimethyl heptyl or 1,2-dimethyl heptyl.

4. The compound of claim 1 wherein Q is a saturated or unsaturated ring of 4 to 8 members consisting of C with at least one of N, S, and O, said ring being optionally substituted with -COR''' or -COOR''' wherein R''' is a hydrogen or C_1-C_5 straight or branched chain alkyl.

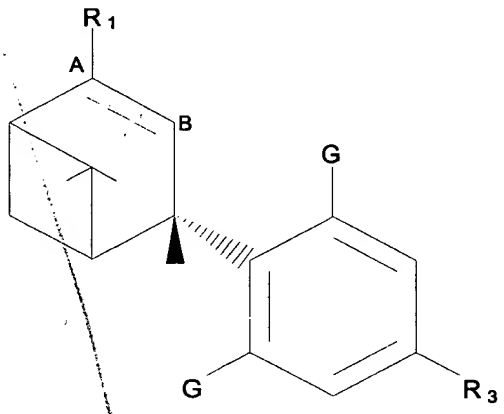
5. The compound of claim 1, wherein R_1 is $-CH_2OH$, $-C(O)N(R'')_2$, -C(O)OR'', -COOH, an amino acid, or a carboxamide.

6. A pharmaceutical composition for treating, preventing, or managing hypertension, inflammation, peripheral pain, gastrointestinal disorders, or autoimmune diseases comprising as an active ingredient a therapeutically effective amount of a compound of claim 1.

7. The pharmaceutical composition of claim 6 further comprising a pharmaceutically acceptable diluent or carrier.

8. The pharmaceutical composition of claim 7, wherein the diluent is an aqueous cosolvent solution comprising a pharmaceutically acceptable cosolvent, a micellar solution or emulsion prepared with natural or synthetic ionic or non-ionic surfactants, or a combination of such cosolvent and micellar or emulsion solutions.

9. A method for preventing, treating, or managing hypertension, inflammation, peripheral pain, gastrointestinal disorders, or autoimmune diseases comprising administering to an individual in need thereof a pharmaceutical composition comprising a therapeutically effective amount a compound of the general formula:



having the (3S,4S) configuration, and which is essentially free of the (3R,4R) enantiomer, wherein:

A---B designates an optional double bond,

R_1 is (a) -R'N(R")$_2$ wherein R' is C_1-C_5 straight or branched chain alkyl and each R", which may be the same or different, is hydrogen or C_1-C_5 straight or branched chain alkyl optionally containing a terminal -OR'" or -OC(O)R'" moiety wherein R'" is hydrogen or C_1-C_5 straight or branched chain alkyl, (b) -Q wherein Q is a heterocyclic moiety having a labile hydrogen atom so that said moiety acts as a carboxylic acid analogue, (c) -R'X wherein R' is C_1-C_5 straight or branched chain alkyl and X is halogen, (d) -R'C(O)N(R")$_2$ wherein R' is a direct bond or C_1-C_5 straight or branched chain alkyl and each R", which may be the same or different, is hydrogen or C_1-C_5 straight or branched chain alkyl optionally containing a terminal -OR'" or -OC(O)R'" moiety wherein R'" is hydrogen or C_1-C_5 straight or branched chain alkyl, (e) -R'C(O)OR" wherein R' is a direct bond or C_1-C_5 straight or branched chain alkyl and R" is hydrogen or C_1-C_5 straight or branched chain alkyl optionally containing a terminal -OR'" or -OC(O)R'" moiety wherein R'" is hydrogen or C_1-C_5 straight or branched chain alkyl, (f) -R' wherein R' is C_1-C_5 straight or branched chain alkyl, or (g) -R'OR'" wherein R' is C_1-C_5 straight or branched chain alkyl and R'" is hydrogen or C_1-C_5 alkyl;

G is hydrogen, halogen, or $-OR_2$ wherein R_2 is hydrogen or C_1-C_5 straight or branched chain alkyl optionally containing a terminal -OR'", -OC(O)R'", C(O)OR'", or -C(O)R" moiety wherein R'" is hydrogen or C_1-C_5 straight or branched chain alkyl; and

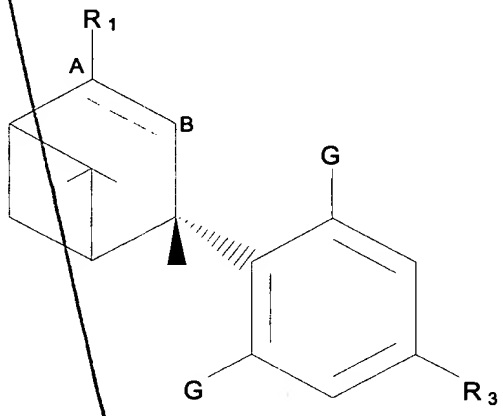
R_3 is (a) C_1-C_{12} straight or branched chain alkyl, (b) -OR"", in which R"" is a straight chain or branched C_2-C_9 alkyl which may be substituted at the terminal carbon atom by a phenyl group, or (c) $-(CH_2)_nOR'''$ wherein n is an integer of 1 to 7 and R'" is hydrogen or C_1-C_5 alkyl.

10. The method of claim 9 wherein, R_1 is $-CH_2OH$, G is hydrogen or OR_2, R_2 is a lower alkyl group, and R_3 is a straight or branched chain C_5-C_{12} alkyl.

11. The method of claim 10, wherein G is $-OCH_3$ and R_3 is 1,1-dimethyl heptyl.

12. The method of claim 10, wherein R_1 is $-CH_2OH$, G is $-OCH_3$, and R_3 is 1,1-dimethyl heptyl.

13. A method for preventing, treating, or managing tumors expressing CB2 receptors comprising administering to an individual in need thereof a pharmaceutical composition comprising a therapeutically effective amount a compound of the general formula:



having the (3S,4S) configuration, and which is essentially free of the (3R,4R) enantiomer, wherein:

A---B designates an optional double bond,

R_1 is (a) -R'N(R")$_2$ wherein R' is C_1-C_5 straight or branched chain alkyl and each R", which may be the same or different, is hydrogen or C_1-C_5 straight or branched chain alkyl optionally containing a terminal -OR'" or -OC(O)R'" moiety wherein R'" is hydrogen or C_1-C_5 straight or branched chain alkyl, (b) -Q wherein Q is a heterocyclic moiety having a labile hydrogen atom so that said moiety acts as a carboxylic acid analogue, (c) -R'X wherein R' is C_1-C_5 straight or branched chain alkyl and X is halogen, (d) -R'C(O)N(R")$_2$ wherein R' is a direct bond or C_1-C_5 straight or branched chain alkyl and each R", which may be the same or different, is hydrogen or C_1-C_5 straight or branched chain alkyl optionally containing a terminal -OR'" or -OC(O)R'" moiety wherein R'" is hydrogen or C_1-C_5 straight or branched chain alkyl, (e) -R'C(O)OR" wherein R' is a direct bond or C_1-C_5 straight or branched chain alkyl and R" is hydrogen or C_1-C_5 straight or branched chain alkyl optionally containing a terminal -OR'" or -OC(O)R'" moiety wherein R'" is hydrogen or C_1-C_5 straight or branched chain alkyl, (f) -R' wherein R' is C_1-C_5 straight or branched chain alkyl, or (g) -R'OR'" wherein R' is C_1-C_5 straight or branched chain alkyl and R'" is hydrogen or C_1-C_5 alkyl;

G is hydrogen, halogen, or -OR_2 wherein R_2 is hydrogen or C_1-C_5 straight or branched chain alkyl optionally containing a terminal -OR'", -OC(O)R'", C(O)OR'", or -C(O)R" moiety wherein R'" is hydrogen or C_1-C_5 straight or branched chain alkyl; and

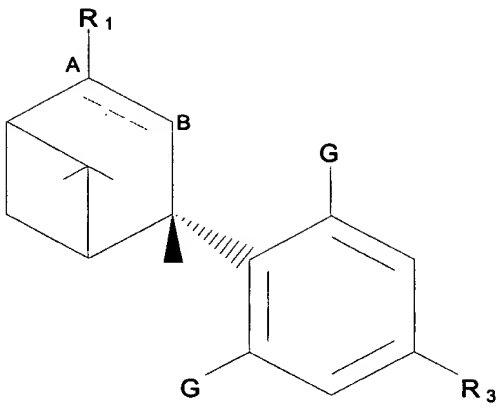
R_3 is (a) C_1-C_{12} straight or branched chain alkyl, (b) -OR'"", in which R'"" is a straight chain or branched C_2-C_9 alkyl which may be substituted at the terminal carbon atom by a phenyl group, or (c) -$(CH_2)_n$OR'" wherein n is an integer of 1 to 7 and R'" is hydrogen or C_1-C_5 alkyl.

14. The method of claim 13 wherein, R_1 is -CH_2OH, G is hydrogen or OR_2, R_2 is a lower alkyl group, and R_3 is a straight or branched chain C_5-C_{12} alkyl.

15. The method of claim 14, wherein G is -OCH_3 and R_3 is 1,1-dimethyl heptyl.

16. The method of claim 14, wherein R_1 is -CH_2OH, G is -OCH_3, and R_3 is 1,1-dimethyl heptyl.

17. A CB2 specific antagonist comprising a compound of the general formula:



having the (3S,4S) configuration, and which is essentially free of the (3R,4R) enantiomer, wherein:

A---B designates an optional double bond,

R_1 is (a) -R'N(R")$_2$ wherein R' is C_1-C_5 straight or branched chain alkyl and each R", which may be the same or different, is hydrogen or C_1-C_5 straight or branched chain alkyl optionally containing a terminal -OR'" or -OC(O)R'" moiety wherein R'" is hydrogen or C_1-C_5 straight or branched chain alkyl, (b) -Q wherein Q is a heterocyclic moiety having a labile hydrogen atom so that said moiety acts as a carboxylic acid analogue, (c) -R'X wherein R' is C_1-C_5 straight or branched chain alkyl and X is halogen, (d) -R'C(O)N(R")$_2$ wherein R' is a direct bond or C_1-C_5 straight or branched chain alkyl and each R", which may be the same or different, is hydrogen or C_1-C_5 straight or branched chain alkyl optionally containing a terminal -OR'" or -OC(O)R'" moiety wherein R'" is hydrogen or C_1-C_5 straight or branched chain alkyl, (e) -R'C(O)OR" wherein R' is a direct bond or C_1-C_5 straight or branched chain alkyl and R" is hydrogen or C_1-C_5 straight or branched chain alkyl optionally containing a terminal -OR'" or -OC(O)R'" moiety wherein R'" is hydrogen or C_1-C_5 straight or branched chain alkyl, (f) -R' wherein R' is C_1-C_5 straight or branched chain alkyl, or (g) -R'OR'" wherein R' is C_1-C_5 straight or branched chain alkyl and R'" is hydrogen or C_1-C_5 alkyl;

G is hydrogen, halogen, or -OR_2 wherein R_2 is hydrogen or C_1-C_5 straight or branched chain alkyl optionally containing a terminal -OR'", -OC(O)R'", C(O)OR'", or -C(O)R" moiety wherein R'" is hydrogen or C_1-C_5 straight or branched chain alkyl; and

R_3 is (a) C_1-C_{12} straight or branched chain alkyl, (b) -OR"", in which R"" is a straight chain or branched C_2-C_9 alkyl which may be substituted at the terminal carbon atom by a phenyl group, or (c) $-(CH_2)_nOR'''$ wherein n is an integer of 1 to 7 and R''' is hydrogen or C_1-C_5 alkyl.